FEMA Protecting Your Business From Wind

ARE YOU AT RISK?

If you aren't sure whether your business is at risk from hurricanes or tornadoes, check with your local building official, city engineer, or planning and zoning administrator. They can tell you whether you are in an area where these high-wind events occur. Also, they usually can tell you how to protect your business from high winds.

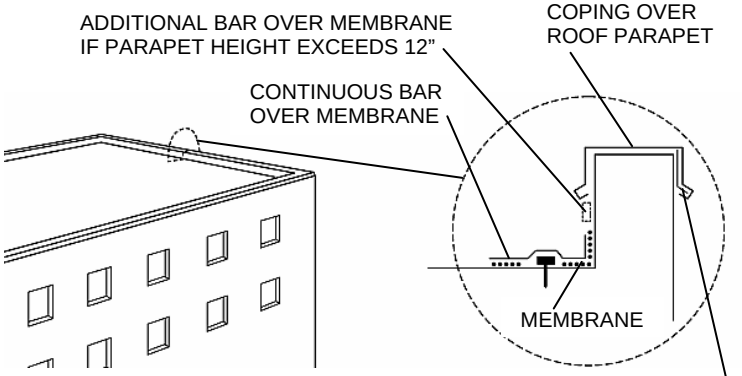
WHAT YOU CAN DO

Protecting your business from high winds can involve a variety of actions, from inspecting and maintaining your buildings to installing protective devices. Most of these actions, especially those that affect your buildings or their utility systems, should be carried out by qualified maintenance staff or professional contractors licensed to work in your state, county, or city. For buildings with built-up and single-ply roofs, one example of wind protection is ensuring that the roof system components, especially the metal gravel stop or coping, are in good condition and have been properly installed.

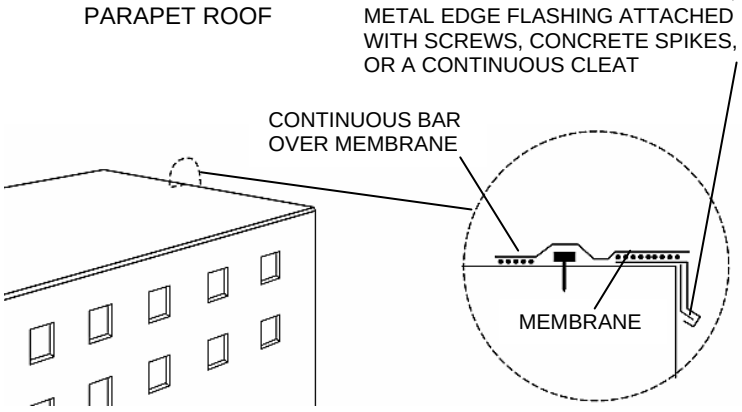
SECURE BUILT-UP AND SINGLE-PLY ROOFS

Built-up and single-ply roofs are common on commercial buildings. Built-up roofs consist of multiple layers of felt and asphalt; single-ply roofs consist of one waterproof membrane. These roofs are often damaged when high winds tear away the metal edge flashing or coping around the perimeter of the roof. Once the flashing or coping is gone, the wind can peel back the roofing material and expose the interior of the building to the elements. The major building codes do not address the wind resistance of flashings and copings.

Whenever your built-up or single-ply roof is repaired or replaced, your roof designer or roofing contractor should ensure that the flashing and coping are made of a corrosion-resistant metal, such as aluminum, and securely attached to the building with screws, concrete spikes, or a continuous cleat. Using a supplementary attachment method to provide additional strength is recommended. For single-ply roofs, a continuous bar placed over the membrane (see detail figures) is an effective means of strengthening the attachment.



PARAPET ROOF



FLAT ROOF

Secure Built-Up and Single-Ply Roofs

TIPS

Keep these points in mind when you have your built-up or single-ply roof repaired or replaced:

- ✓ Single-ply membranes that are fully adhered are less susceptible to damage than mechanically attached or loose-laid air-pressure-equalized membranes.
- ✓ Some local building codes may require that roofs meet design standards for resisting uplift forces. (An example is the American Society of Civil Engineers Standard ASCE 7.) Ask your local building official whether any special requirements apply in your area.
- ✓ Your local building official may be able to inspect your roof and recommend changes that will help protect it from high winds.
- ✓ If you add stone ballast or pavers to your roof, make sure the roof parapet is high enough and that the pavers or individual stones are large enough to resist being picked up and carried by the wind (refer to *Wind Design Standard for Ballasted Single-Ply Roofing Systems* – see below).
- ✓ Roof warranties typically will not cover damage caused by strong storms.

ESTIMATED COST

A roofing contractor will charge you about $1 to $2 per linear foot to replace aluminum fascia cap when the roof is being replaced. The cost is much higher if the fascia is replaced separately.

OTHER SOURCES OF INFORMATION

Wind Design Standard for Ballasted Single-Ply Roofing Systems, ANSI/SPRI RP-4-1997. (Available from SPRI, 617-444-0242)

Achieving Wind-Resistant Roof Coverings, presented at the 1995 ASCE Illinois Section, Structural Division Lecture Series, Structural Consequences of Natural Disasters, April 5, 1995

Performance of Roofing Systems in Hurricane Hugo, Institute for Disaster Research, Texas Tech University, August 1990

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